

## ABSTRACT OF THE DISCLOSURE

A gas separation apparatus includes an irradiation chamber for receiving a gas. An irradiation device irradiates the gas within the irradiation chamber for causing molecules of the gas to break apart into larger and smaller constituent components. A  
5 separation arrangement separates the larger and smaller constituent components from each other within the irradiation chamber by forcing the larger and smaller constituent components toward different regions of the irradiation chamber. An outlet removes the smaller constituent components from the irradiation chamber.